CLAIMS

We claim:

1. A method of enhancing learning in an individual which comprises administering an effective amount of Fibroblast Growth Factor 18 (FGF-18).

2. A method of enhancing memory consolidation in an individual which comprises administering an effective amount of FGF-18.

3. A method of treating a condition selected from the group consisting of: impaired cognitive performance, learning deficit, cognition deficit, attention deficit, epilepsy, schizophrenia, Alzheimer's disease, and amnesiac syndromes, comprising the step of administering to an individual in need of such treatment a therapeutically effective amount of Fibroblast Growth Factor-18.

4. The method of claim 3, wherein the condition is impaired cognitive performance.

5. The method of claim 3, wherein the condition is a learning deficit.

6. The method of claim 3, wherein the condition is attention deficit.

7. The method of claim 3, wherein the condition is epilepsy.

8. The method of claim 3, wherein the condition is schizophrenia.

9. The method of claim 3, wherein the condition is Alzheimer's disease.

10. The method of claim 3, wherein the condition is an amnesiac syndrome.

11. A method for determining the susceptibility of a subject to a condition selected from the group consisting of: impaired cognitive performance, learning deficit, cognition deficit, attention deficit, epilepsy, schizophrenia, Alzheimer's disease and an amnesiac syndrome, wherein the method comprises the steps of:

(a) removing from the central nervous system of the subject a sample comprising Fibroblast Growth Factor-18 mRNA, and

(b) quantitating the Fibroblast Growth Factor-18 mRNA in said sample;

wherein the level of said Fibroblast Growth Factor-18 mRNA is indicative of said subject's susceptibility to said condition.

12. The method of claim 11, wherein the sample is obtained from the hippocampus.

13. A method for determining the pharmacological effect of a compound on the level of FGF-18 gene expression, comprising the steps of:

(a) growing one or more cultures of neural cells;
(b) measuring the level of FGF-18 gene expression in the cultured neural cells;
(c) contacting the compound with at least one of the cultures of neural cells; and
(d) measuring the level of FGF-18 gene expression in the cultured neural cells that have been contacted with the compound;

wherein a difference in the level of FGF-18 gene expression that correlates with exposure of the neural cells to the compound is indicative of a pharmacological effect of said compound.

14. A method for identifying memory-related proteins, comprising the steps of

(a) providing naïve, swimming control, and water-maze trained animals;
(b) extracting mRNA from the hippocampus of the naïve, control and trained animals;
(c) determining differential gene expression levels by quantitating and comparing mRNA levels in naïve, control and trained animals so as to identify "memory related genes"; and
(d) quantitating protein levels reflecting memory related genes for both control and target groups.

15. The method of claim 14, further comprising the step of validating the differentially expressed genes quantified in step (d) by quantitative RT-PCR.

16. The method of claim 15, wherein the quantitation of mRNA is carried out by a method selected from the group consisting of: Northern blotting, nuclease protection assays, array hybridization, RT-PCR, and hybridization with labeled oligonucleotide probes.

17. The method of claim 16, wherein the quantitation of mRNA is carried out by array hybridization.

18. A method of enhancing memory, attentive cognition or learning comprising the administration of a composition, wherein the composition comprises an effective amount of FGF-18 and a pharmaceutically acceptable carrier, to a subject in need thereof.

19. The method of claim 18, wherein the subject suffers from a condition selected from the group consisting of: impaired cognitive performance, learning deficit, cognition deficit, attention deficit, epilepsy, schizophrenia, Alzheimer's disease, and amnesiac syndromes.

20. The method of claim 18, wherein the composition is administered in an amount effective to increase FGF-18 levels in the subject's brain.

21. The method of claim 20, wherein the composition is administered in an amount effective to increase FGF-18 levels in the subject's hippocampus.